
April 2002 Monthly Progress Report

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Task Assignment 99-001-00 April 2002

MANAGEMENT

GSFC ATR - Dr. J. Green

Raytheon ITSS Task Leader - L. Mayo

Raytheon ITSS Group Manager - L. Mayo

TASK OBJECTIVE: The non-personal services required under this task include performing all necessary functions to manage Raytheon ITSS contract staff supporting the Space Science Data Operations Office (SSDOO). The Raytheon ITSS management team will meet with the SSDOO management team to discuss significant events and contract highlights to be presented to upper management and Headquarters, and current contract issues and concerns.

SIGNIFICANT EVENTS:

- Staff held weekly senior staff meetings.
 - Staff attended SSDOO-RITSS management meeting.
 - Staff supported BotBall activities.
 - Staff coordinated project DCE computer lease/buy analysis. Staff met with Raytheon Finance and Purchasing representatives.
 - Staff interviewed science group manager.
 - Staff performed annual performance reviews.
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Task Assignment 99-003-00

April 2002

ASTROPHYSICS MISSION SUPPORT SERVICES

GSFC ATR - Dr. N. Gehrels

Raytheon ITSS Task Leader - Dr. J. F. Cooper

Raytheon ITSS Group Manager

TASK OBJECTIVE: This task provides support and consultation services for the Compton Gamma Ray Observatory (CGRO) project scientist in areas of data management, analysis, and archiving for CGRP and for the HIC experiment on the Galileo spacecraft. This support includes attending GRO Science Working Group meetings, aiding target-of-opportunity decisions, monitoring the health of the spacecraft, and presenting GRO papers at scientific meetings. In addition, this task will provide consultation on data products from the HIC.

SIGNIFICANT EVENTS:

1. The Task Leader's panel report for the DPS/AAS decadal survey, "Europa Exploration: Science and Mission Priorities", went into press for publication in a conference series volume of the Astronomy Society of the Pacific.
2. The Task Leader was co-author on the review article "Radiation Effects on the Surfaces of the Galilean Satellites" by R. E. Johnson (University of Virginia) now submitted for publication in the upcoming conference book entitled "Jupiter: Planet, Satellites and Magnetosphere" as part of the University of Arizona Space Science Series.
3. Task staff acquired predict spacecraft ephemeris and attitude data from J. Mafi (UCLA) of the Galileo Magnetometer team for the upcoming Galileo Orbiter A34 flyby of the small Jovian satellite Amalthea on November 5, 2002. These data are being used to model potential signatures of magnetospheric ion interaction with this satellite in the Heavy Ion Counter data. HIC will also measure interactions of magnetospheric ions with diffuse material in the Jovian ring system after the Amalthea flyby.
4. Task staff analyzed previously acquired magnetometer and Heavy Ion Counter data for the Galileo Orbiter's I32 south polar flyby of Io on October 16, 2001. This was the last Galileo data to be returned from the Io encounters, since a spacecraft system problem prevented data return from the final I33 flyby of Io on January 17, 2002.
5. The Task Leader is assisting E. C. Sittler, Jr. (Code 692) as a proposal team member on definition of cosmic ray ionization experiments for the balloon science payload of the Titan Aerover mission to the atmosphere and near-surface environments of the Saturnian moon Titan.
6. Review of EGRET files for viewing period 7080 has been completed. Task staff are now reviewing files from viewing period 4230 as requested by the lead EGRET scientist, D. Bertsch (Code 661). Files R10738380-415 were analyzed in April 2002.

UPCOMING MILESTONES/EVENTS: Work is in progress on modeling of all HIC Io encounter data for a planned poster presentation at the Spring 2002 AGU Meeting in Washington, D.

C.

RELATIONS TO OTHER TASKS: Work on this task is being supplemented by support from the SSDOO project and the Jovian System Data Analysis Program contract with Raytheon ITSS. Funding from another JSDAP contract, and from one to be awarded by the NASA Planetary Atmospheres Program, are expected to begin in the next several months.

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Task Assignment 99-101-00 April 2002

AMASE-MOCHA-CONCAT DEVELOPMENT GSFC ATR - Dr. C. Cheung Raytheon ITSS Task Leader - E. Shaya Raytheon ITSS Group Manager -

TASK OBJECTIVE: This task provides support for the development of the object -oriented data base multispectral astrophysics data catalog, AMASE (Astrophysics Multimission Archive Search Engine) as an interface to NASA's astrophysics data holdings. This effort is a collaborative one with the University of Maryland (UMD) Computer Science Department, and frequent interactions with UMD counterparts are expected. The general goal for this performance period is to develop the AM ASE prototype into an astronomical search and discovery engine by expanding the data contents and augmenting the search capabilities. Work includes incorporating astrophysics data from other wavelength bands to complete the electromagnetic spectrum and developing procedures to access remote relational data bases.

SIGNIFICANT EVENTS:

a. DSA:

1. Staff attended bi-weekly DSA meetings and weekly DAPFA meetings.
2. Staff worked on use cases and rationale for DSA data requirements.
3. Staff did detailed editing of requirements document.
4. Staff worked on modeling and future planning for DSA.

b. DSE:

1. Staff attended general DSE weekly meetings.
2. Staff attended DSE demonstration weekly meetings.
3. Staff wrote more Java code for DSE communication.

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Task Assignment 99-102-00

April 2002

ADC
GSFC ATR - Dr. C. Cheung
Raytheon ITSS Task Leader - J. Gass
Raytheon ITSS Group Manager

TASK OBJECTIVE: This task operates the Astronomical Data Center, develops multispectral astrophysical metadata interfaces, and provides FITS data format support for the SSDOO.

SIGNIFICANT EVENTS:

- Staffing on task was adjusted downward per NASA management request, and the two released staff members were reassigned.
- Staff provided inputs to government for Code 600 review of ADC activities and services.
- Staff prepared for upcoming May 10, 2002 meeting of the ADF/ADC Science Steering Committee (SSC).
- Staff held extensive discussions with the SSC chairperson (Dr. M. Donahue) to discuss ADC status and plans for the SSC meeting agenda.
- Staff continued to support NVO activities, particularly for the ADEC Interoperability Working Group and the Metadata Working Group.
- Staff updated several Web pages.
- Staff answered eight science/technical questions.
- Staff continued work on converting legacy datasets to XML, processing ten catalogs to XML using the legacy pipeline.
- Staff reprocessed 77 journal tables to correct validation errors.
- Staff reported statistical information for the Code 600's ADC review.
- Staff continued the human validation process of the top 100 catalogs and journal tables converted to XML.
- Staff produced for and distributed to ADS a tab formatted list containing information about ADC's newly acquired datasets directly related to specific articles in the ADS.
- Staff prepared articles for the ADC Electronic Newsletter.
- Staff participated in the NVO Project Team meeting in Tucson, with all expenses paid by staff's own research grant funds. Staff contributed significantly to the discussions in several areas, including: (a) XML applications; and (b) plans and requirements for NVO science demonstrations, at least one of which will showcase ADC's IMPRESS service.
- Staff participated in and supported 2 ADEC telecons, including the preparation of a general NASA Data Centers powerpoint presentation that was presented to the new NASA SAWG (Science Archives Working Group) on April 29.
- Staff submitted 2 ADC-related abstracts for the June 2002 AAS meeting in Albuquerque. Travel and registration fees will be paid by staff's own research grant funds.

UPCOMING MILESTONES/EVENTS:

- Raytheon will complete preparations for the upcoming ADC/ADF SSC meeting.
 - Staff will continue working on the conversion of legacy dataset files to XML.
 - Raytheon will modify selected ADC Web pages to provide better access to the available XML-based archive and XML-based services.
 - Staff will produce a tag-delimited database containing information about ADC's repository datasets that are not directly related to specific article in the ADS.
 - Raytheon will determine what needs to be done to ADC web pages into compliance with Section 508 guidelines.
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Task Assignment 99-104-00 April 2002

INFRARED/SUBMILLIMETER/RADIO ASTROPHYSICS DATA MANAGEMENT

GSFC ATR - Dr. D. Leisawitz
Raytheon ITSS Task Leader
Raytheon ITSS Group Manager -

TASK OBJECTIVE: The contractor shall perform the following tasks applicable to each of the NASA astrophysics missions, COBE, IRAS, SWAS, MAP, ISO, SOFIA, MSX, WIRE, SIRTf, 2MASS, and possibly others identified by the government: Planning and Communication, Interactions with Projects, Improving Data Management Processes, Data Processing, Data Archiving and Archive Quality Assurance, Archival Research Support, Miscellaneous, and General Guidelines (as given in the detailed task description).

SIGNIFICANT EVENTS: Staff supported NASA Astrophysics Data centers Executive Council (ADEC) discussions that involved Code 631 activities.

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Task Assignment 99-110-00 April 2002

AUTONOMOUS TECHNOLOGY
GSFC ATR - Dr. M. E. Van Steenberg
Raytheon ITSS Task Leader - R. Dunlap
Raytheon ITSS Group Manager

TASK OBJECTIVE: The objective of this task is to support the development of a simulation environment that supports autonomous distributed spacecraft control and test science collection techniques using artificial intelligence (AI) technologies. This work is in collaboration with the GSFC's Guidance, Navigation and Control Center and JPL's Automation and Control group. The contractor shall support the following activities and contribute to reports and white papers as appropriate: (a) evaluate Science Quick-Look Analysis Tools (e.g., HEASARC) for use as on-board analysis tools, (b) define Typical Science-Driven Maneuver Automation Requirements, (c) define Typical Science Automation Requirements, (d) define Basic System Architecture, and (e) develop rapidly a prototype to demonstrate key capabilities.

SIGNIFICANT EVENTS: No work was performed on this task during the reporting period.

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Task Assignment 99-113-00

April 2002

GLAST
GSFC ATR - R. Fink
Raytheon ITSS Task Leader - J. Palencia
Raytheon ITSS Group Manager

TASK OBJECTIVE: GLAST is a multipartner gamma-ray survey mission with a GO observation component. The ADF will provide a prototype public archive design using Beowulf and other related technology. The prototype will implement the archive design using the Compton Gamma Ray Observatory EGRET data set. The contractor shall provide personnel to support the following tasks: (1) systems administration support of the Beowulf cluster and (2) programming support as requested for implementing the archive prototype.

SIGNIFICANT EVENTS:

- Staff assisted in the system administration of HPC's Beowulf Clusters.
- Staff assisted in the system administration of Glast Beowulf Cluster.
- Staff finished node cloning of the Becker cluster.
- Staff prepared the hardware specifications for the RAIDServer of MEDUSA and THD (J. Dorband)
- Staff prepared the hardware specifications for a 256-node THD Beowulf cluster (J. Dorband).
- Staff prepared the hardware specifications for a 16-node Beowulf cluster (P. Merkey).
- Staff prepared the hardware re-specifications for a 80-node GR Beowulf cluster (J. Centrella).
- Staff prepared the hardware re-specifications for a 9-node SIMDOG Beowulf cluster (E. Shaya).

UPCOMING MILESTONES/EVENTS:

- Staff continues the upgrade other HPC's Beowulf Clusters (Orka, Topaz, Hivel, Pivot).
- Staff starts modeling neuron populations.
- Staff works on MPI::Parallel::Simple.

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Task Assignment 99-115-00

April 2002

SWIFT

GSFC ATR - Dr. R. Pisarski

Raytheon ITSS Task Leader - Dr. E. Pier

Raytheon ITSS Group Manager

TASK OBJECTIVE: Swift is a multipartner gamma-ray burst detection and follow-up observation mission. The Astrophysics Data Facility (ADF) will provide science data processing pipeline design, development, and operations. In addition, the ADF will be responsible for providing Quicklook processing to the Swift Mission Operations Center (MOC) at Pennsylvania State University (PSU). The final outputs of the pipeline processing will be delivered to the HEASARC at GSFC and to project partners in England and Italy.

SIGNIFICANT EVENTS:

- Staff finished re-write of stream dameon.
- Staff continued testing modified pipeline daemons with ASCA data.
- Staff began working with DLT mini-jukebox to develop telemetry archiving system.
- Staff installed HEAdas (a.k.a. FTOOLS2) Build1
- Staff wrote a demo processing script which runs the build1 tasks and send a list of comments to the Italian XRT developers.
- Staff discussed file-naming schemes for BAT and XRT
- Staff provided packet reading software to ATR for use in the telemetry to FITS converter. tools.

UPCOMING MILESTONES/EVENTS:

- Staff will make a new release of packets software.
- Staff will continue discussion of XRT software with Italians.
- Staff will finish development of coordinate transform tools.
- Staff will continue work on DLT telemetry archiving system

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Task Assignment 99-201-00 April 2002

IMAGE

GSFC ATR - R. Burley

Raytheon ITSS Task Leader - C. Klipsch

Raytheon ITSS Group Manager - T. Kovalick

TASK OBJECTIVE: The objectives of the IMAGE Mission Data System task are to develop, test, and maintain the IMAGE Web data access and display system, the IMAGE data processing system, and the IMAGE data distribution system.

SIGNIFICANT EVENTS:

- Staff investigated what needs to be done for ISTP Web pages to become section 508 compliant.
 - Staff submitted Section 508 plan for ISTP Web pages to the government.
 - Staff continued work on new POLAR Web page.
 - Staff continued 508 compliance work on the SMOC Data Delivery Website.
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Task Assignment 99-202-00 April 2002

MAGNETOSPHERIC MODELING AND ANALYSIS

GSFC ATR - Dr. S. Fung

Raytheon ITSS Task Leader - Dr. L. Tan

Raytheon ITSS Group Manager - T. Kovalick

TASK OBJECTIVE: This task calls for (1) the performance of analysis supporting the development of a new generation of trapped radiation, (2) the documentation and analysis support in an ongoing SSDOO research program on the outer magnetosphere, and (3) ISTP campaign coordination.

SIGNIFICANT EVENTS:

1. Task staff completed the loading of three-hour Kp index data (from Kyoto University) into the database, having ingested all Kp data of 1978-1987 and the first half of 1988. Also, he wrote and tested a script which parses the three-hour KP index file(s) and creates a SQL load script.
2. Task staff prepared a few examples of user query scenarios for trapped radiation modeling. Query about two particle data sets (OHZORA and NOAA/TIROS) and three magnetospheric state index sets (Dst, Kp, and AE) were included in these examples.
3. Task staff analyzed the CRRES-MEA electron data and observed clear evidence indicating that the betatron acceleration mechanism plays an important role in the generation of relativistic electrons during isolated large substorm events. A poster is being prepared to present the study to the 2002 AGU Spring Meeting to be held in Washington, D.C., on May 28-31, 2002.
4. Task staff downloaded the magnetic field data measured on the CRRES spacecraft from both NSSDC and the Boston University Web server. He found and corrected some bug in the reading program of magnetic field data archived in the NSSDC.

UPCOMING MILESTONES/EVENTS: Relevant to this task, the abstract of a talk entitled "Development of a magnetospheric state-based trapped radiation data base" (authors: S. F. Fung et al.) were submitted to the 34th COSPAR Scientific Assembly, to be held in Houston, TX, on October 10-19, 2002.

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Task Assignment 99-203-00 April 2002

SPACE SCIENCE VISUALIZATION FACILITY GSFC ATR - Dr. R. Kessel Raytheon ITSS Task Leader - J. Friedlander Raytheon ITSS Group Manager - T. Kovalick

TASK OBJECTIVE: The task of the Space Science Visualization Facility within the SSDOO is to support the SSDOO education and outreach activities, scientific analyses, and IMAGE mission activities. Members of the facility will need to work closely with the space science community in order to create appropriate space science videos, illustrations, and displays and to develop overall approaches and procedures for the maintenance of the task.

SIGNIFICANT EVENTS:

1. Staff was involved in many 3-D visualization projects including:
 - a. Created 48 proofs for L. Garcia for Image publication
 - b. Created original simulations for Dr. M. Kessel on Cluster orientations
 - c. Began preliminary work on Visualization Database
 - d. Updated Visualization Render Farm
 - e. Researched new methods for distributive rendering
2. Staff participated in GSFC Take Our Daughters to Work Day events.
 - a. Designed and printed poster for display in all Buildings.
 - b. Coordinated design use with code 253.
 - c. Hosted digital imaging education event for three groups of children.
 - d. Designed and printed souvenirs with girls pictures for participants.
3. Vislab took delivery of a 50 inch plasma display unit for review of visualization material at HDTV resolution. Vislab required a viable playback solution for our 50 inch hdtv monitor. Staff worked to configure a Linux based playback unit, but was unable to attain the necessary performance required to play back hdtv without dropping frames.
4. Staff Illustrated a caricature of Mary Kicza for the Space Science Directorate (SSD) to be signed by her colleagues and presented to her at her going away luncheon.
5. Staff Illustrated 19 figures for the Space Science Data Operations Office (SSDOO) Chief to be used in an upcoming presentation.
6. Staff Initiated 3-D modeling of the Cluster spacecraft for an animation for Code 632, Space Physics Data Facility (SPDF).
7. Staff Web design initiatives included:
 - a. working on designing the new Sun Earth Day site for 2003.
 - b. design of the DPS site for Lou Mayo.
 - c. redesign of the POETRY site and the CD Tour for Dr. Sten Odenwald.
8. Staff is participating in Asian Pacific American activities for GSFC, including:
 - a. design and printing of cultural and culinary flyers for advertising events.
 - b. creation of charts describing APA as part of GSFC.
 - c. updating and printing posters to be displayed around GSFC To foster APA awareness.
9. Staff printed and trimmed 530 cover illustrations for SBIR/STTR solicitation.

10. Staff created commemorative plaque to be presented to GSFC director honoring the renaming of the HESSI mission to RHESSI after Reuben Ramaty, the first GSFC employee to be so honored.
11. Staff updated and shipped cover Office of Space Science EPO conference folder.
12. Staff created several images for going away party.

UPCOMING MILESTONES/EVENTS:

1. Staff will complete report on Section 508 Web compliance.
2. Staff will print and display new poster for building 26 lobby.
3. Staff will integrate new plasma screen display in lab for video previews.

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Task Assignment 99-204-00 March 2002

SPACE PHYSICS SOFTWARE DEVELOPMENT, SYSTEM MAINTENANCE, AND SPECIAL PROJECTS

GSFC ATR - Dr. R. McGuire

Raytheon ITSS Task Leader - T. Kovalick

Raytheon ITSS Group Manager - T. Kovalick

TASK OBJECTIVE: The objectives of the space physics development task are to design, develop, document, support, and promote the re-engineering of the SSC Software Systems and the CDAW Graphics Systems. These software systems will support Satellite Situation Center (SSC) Operations, ISTP SPOF, SPDS, STEP, other NASA projects, and the space physics community in general. Accomplishing this objective requires maintenance of the software in both a UNIX and VMS environment, use of appropriate software development tools and methods, development of concise documentation, definition of new magnetospheric field and region models, and communication with scientists and end users both at the NSSDC and in the larger space physics community to ensure that their needs and requirements are being met. This task will work closely with the CDF/graphics task to fulfill its responsibilities. CRUSO in particular will play an important user support role for both SSC and the CDAW Graphics System. It will serve as the first point of contact for users, distribute documentation, answer simple questions, and forward software and science questions to this task and to SSC Operations.

SIGNIFICANT EVENTS:

1. Work on CDAWeb Software: Staff investigated a few CDAWeb errors generated by the University of Michigan folks. Staff continued enhancing the stacked timeseries plotting software to allow more indexing options. Staff began testing the Web pages for Section 508 compliance purposes and filed a compliance plan with GSFC. Staff began investigating the geographic registration problem long suspected by staff and recently reported by a user of the Polar UVI/VIS image data.
2. CDAWeb Design work: No progress.
3. Work on SSCWeb Software: Staff worked on the command menu layout issues that have cropped up under Netscape 6.2.x. Various issues were discovered while investigating how to fix the problems and a generic solution (one that will work for all browsers) is still being developed. Staff began testing the web pages for Section 508 compliance purposes and filed a compliance plan with GSFC. Staff also reviewed the document prepared by the ATR discussing the issues related to integrating two additional models into the software.
4. CDAWeb Statistics: The statistics include GSFC, RAL and EDC (not ISAS): CDAWeb fulfilled 6,695 plotting requests, 24,228 ASCII listing requests and 252 CDF delivery requests, where each request can contain more than one plot/listing/file; (RAL: 32, 7, 7), (EDC: 30, 0, 0); there were 121,310 total accesses to the rumba CDAWeb HTTP Server. The anonymous ftp site delivered 22,971 CDF files and 220 software/document files to non-staff users. The "overall" ftp statistics file was updated and can be found at http://cdaweb/cdaweb/logs/FTPaccumulative_record.html. The monthly web server and ftp statistics files can be found at <http://cdaweb/cdaweb/logs>.
5. SSC Statistics: Usage statistics from WHARFRAT, are as follows: There were 45 accesses of the SSC Version 3.0 Main Menu; Locator was executed once; Query was not executed; the Data Base listing was not accessed; the Calculator was not accessed; the File Output option of the system was executed 42 times and the FTP option was executed 19 times.
6. Usage statistics for the Web-based versions of SSC Query and SSC Locator programs are as follows: The query_server was executed a total of 110 times; the tabular_server was executed a total of 559 times; the graphical_server was executed 1,190 times for a total of 1,859 accesses, excluding developers. In addition, the SPOF accessed the systems 47 times; SSC Operations staff accessed the systems seven times. The SSC Web pages (main page as well as any GIF, user's guide, etc.) were accessed 8,038 times, with 173 accesses by SPOF staff and 30 accesses by SSC Operations staff.

7. Mirror Sites: RAL, EDC and the Japanese sites are retrieving their provided data and software updates on a regular basis through their FTP accounts. Usage statistics were received from two of the three sites this month; these numbers were incorporated into the CDAWeb statistics listed above.
8. The CDAWeb metadata generator and inventory plot generation software are being executed nightly. As part of this process, any new MAP, IMAGE, LANL, GOES, ACE and Cluster files are being "ingested" as well. The FAST data provider did access his account, but thus far has just sent us one data file. In addition, the master cdf "notes" web pages were updated each week.
9. PWG software reengineering effort: Staff set up another mirror site in order to prepare the data to eventually go to the new PWG CD-ROM generation machine. Staff also began investigating the ISTP/SPOF web site software which is being moved from an ISTP controlled machine to NSSDC.

UPCOMING MILESTONES/EVENTS:

1. Staff will assess the CDAWeb and SSCWeb pages for Section 508 Web Accessibility compliance and report findings to the government web development coordinator.
2. Staff will continue to work with the IMAGE project personnel and develop the appropriate software to be able to display the best "views" of the IMAGE data through CDAWeb.
3. Staff will continue testing and maintenance on CDAWeb and testing/enhancing all of the plotting and listing software.
4. Staff will continue testing, modifying, and documenting the CDAWlib software and associated Web pages.
5. Staff will continue investigating making 3-D orbit plots available through the SSCWeb system.

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Task Assignment 99-205-00 April 2002

SPACE PHYSICS DATA ACQUISITION AND VALUE-ADDED SERVICES

GSFC ATR - Dr. R. McGuire
Raytheon ITSS Task Leader - Dr. H. Hills
Raytheon ITSS Group Manager - T. Kovalick

TASK OBJECTIVE: The objectives of this task are four-fold: 1. to support space physics and information acquisition for NSSDC, including support for ingest to the near-line/on-line archive and/or for distribution as CD-ROMs; 2. to support value-added space physics services, including operation of the SSC, creation of new composite space physics data/model products, definition of science user requirements for SSDOO systems and other NSSDC data and information systems, and science-expert support for other efforts such as IACG and SPDS as appropriate; 3. to carry out selected archival research and mission planning activities, including publication of results; and 4. to provide logistics support as directed for working meetings related to SPDS, including travel reimbursement.

SIGNIFICANT EVENTS:

1. DIONAS INGEST:

- a. ISIS: Routine ingest continued.
- b. SAMPEX: Routine ingest continued. All 24 entries for SAMPEX in NMC were updated to reflect the new host, NSSDCFTP. Also, a few more pointers to the metadata were corrected in the 0readme files.

2. OTHER DATA INGEST:

- a. TIROS: Several shipments of data were received thru istp-events, then moved to CDAWeb for availability. Agreement was made with the data provider to notify us when and how much data will be received on each shipment.
- b. ULYSSES: Task staff updated Ulysses data archives at NSSDC through early 2002 in support of the Ulysses Science Working Team meeting at ESA-ESTEC during April 17-19, 2002. Two new data sets for cosmic ray fluxes from the COSPIN investigation were also added. A summary chart of Ulysses data at NSSDC was updated for presentation by C. Tranquille (ESA-ESTEC) at the meeting. Data processing software and associated documentation for the Ulysses SWICS Archive were uploaded from the archive CD volume for on-line access on NSSDCFTP. CDF data files from this archive were updated on CDAWeb for 1998-1999.
- c. Wind WAVES: Routine ingest continued for the combined data CDF into CDAWeb.
- d. Helios: Task staff completed migration of Helios 6-second magnetic field data sets to on-line status on NSSDCFTP with assistance of operations staff.
- e. Alouette-2 and AE-B: Revised versions of the Alouette-2 Langmuir Probe data and the AE-B ion mass spectrometer data were loaded onto the FTPHelper interface.
- f. ISEE 3: A 158-record section of duplicate data in isee3_dp_ephem.asc (hourly_magnetospheric data) was deleted.

3. ISIS-1 and -2:

When searching the nssdcftp isis2 directory structure a total of 31164 average binary files were found to not have a matching CDF. It was decided that there were 3 types of problems that would have caused this.

1. 31 Day problem (makecdf problem)
2. Multiple Station (isis pipeline software problem)
3. 31 Day and Multiple station

Software was written to check the isis2 CDFs for their matching binary file; when executing this software a total of 8977 extra CDFs were found that didn't have matching binaries and could not be classified with one of the 3 problems described above. This is a problem because a CDF must have had a matching binary in order for it to have been created. After discussion with Barbara Rowland lists were generated that contained all of the files that were previously on NDADS. Initial manual scans showed that some of the missing binary files were found in these listings. Software is being written to scan these files for a match for each of the extra 8977 CDFs.

All Ougadougou ISIS 2 ionogram data were processed with TOPIST into electron density profiles with a success rate of close to 60%. All Winkfield and Syowa ISIS 2 ionogram data were similarly processed.

4. Maintenance of NSSDC Information Databases:

- a. The TRF population process continued, with circulation of the 3 monthly issues; 3 issues finished circulation and 3 issues were entered into TRF.
- b. Reported problems with Majordomo and the SPACEWARN Bulletin distribution list to system personnel.
- c. Cleaned up several dozen obsolete e-mail addresses in the SPACEWARN Bulletin distribution list.
- d. Uploaded the revised Ulysses data availability chart for J. Cooper (RITSS).
- e. Made available a thumbnail of CRRES for the NSSDC Master Catalog.
- f. Put a link to Boston University's CRRES archive for J. Cooper (RITSS).
- g. HESSI (now renamed RHESSI) entries in NMC were tuned up, separating the s/c level and expt level information. Other entries, especially those of space physics interest, are being perused to do such separation. Most entries in NMC for recent spacecraft are at spacecraft level, though containing experimental information when available. If any s/c has a designated acqsci, available NMC-pertinent info will be passed on to that acqsci. With the rechristening of WDC_R&S and WDC_SI, this updating seems necessary.
- h. Task staff noted to N. James and J. H. King the need for removal of staff access events from logs and reports on public accesses to NSSDCFTP.
- i. A staff scientist checked his WWW pages with the website "Bobby" for conformance with the section 508 requirements. Some pages were rejected because of the three logos that we had to insert on every page due to an earlier GSFC edict. These can be fixed by adopting a single revised version of the logos. A report was sent to N. James regarding the effort involved to make these pages conform. Several other pages, such as file://nssdc.gsfc.nasa.gov/pub/space_physics/cdaw/aareadme.doc cannot be reached now, because they have been moved during the re-orientation of the NSSDC machines.
- j. An e-mail was received, calling attention to an erroneous date in our data base for the OTS launch failure. Review of several sources verified the e-mailer's information, and the date was corrected. At the same time, the BD for OTS and OTS 2 were slightly modified for clarification. A thank-you message was sent to the e-mail sender.
- k. Numerous new entries and updates were added to the s/c, experiments, and data sets database.
- l. The NSSDCFTP directory structure within ISEE-3 was revised slightly.

5. Ephemeris information was created and updated into the SSC's UNIX data base for 26 spacecraft. Files for three spacecraft were updated for the [ACTIVE.IACG.ELEMENTS] directory.

6. The draft and final versions of SPX 581 were made available via WWW and FTP. SPX 582 was drafted and loaded online. It carries stories on four launches. As usual, a copy of that was emailed to COSPAR. Seven WDC SI announcements regarding the launch and assignment of IDs to seven missions were sent by e-mail and posted to the Usenet News. Five CCSDS IDs were assigned for future mission/simulation telecommunications.

7. A new entry in D.William's planetary website is the spin axis orientation of the planets, as RA and Dec. The corresponding ecliptic latitude and longitude of the spin vectors were computed and passed to Williams.

The on-again and off-again problem in the NORAD propagator at code 500 became on-again. It was fixed after contacting Don Squier of CSC.

ISEE3 orbit had never been included in the SSC. As a result of the availability of GSE vectors, most at about 64-min resolution and many at much wider resolutions, a new dataset was created with those GSE's at exactly 12-min resolution. This set was further processed into T-o-D GEI vectors (with time explicitly for each vector and distanced in decamegameters), and passed to the development staff for ingest into SSC database. The time span extends from 78 August through 83 December. (It became a heliocentric spacecraft in 1984, with the orbital data already in NSSDC's heliospheric site.)

8. MAINTENANCE AND UPDATING ON THE VARIOUS WWW PAGES:

a. Algorithms and Models on WEB:

1. Updated T89 and T96 models

Accesses for this month:

CGM	899
IRI model	2220
MSIS model	1162
IGRF model	1266
TRAP particle model	122
T89 model	444
T96 model	213
Heliospheric Ephemerides	733
IMP-8 daily position ...	4

b. COHOWEB and OMNIWEB systems (data and software)

Accesses for OMNIWEB: plots/list/scatter: 1431 / 553 / 42 = 2026
 Accesses for COHOWEB: plots/list: 181 / 33 = 203

c. ATMOWEB system and FTPHelper (graphical browsing & retrieve FTP data)

1. Updated FTPBrowse s/w and home page for Alouette2

FTPBrowsing accesses for this month (plotting/listing): 194 / 36 = 230
 ATMOWeb accesses for this month (plotting/listing): 73 / 5 = 78

d. FTP site (System software, data ingest, creation of CD-Rs)

1. Downloaded merged 2-min res. files: ISEE 3 magnetic & plasma data, and position into NSSDCFTP site
2. Loaded a few aareadme files to nssdcftp machine

e. Cosmic and Heliospheric pages and services

f. Geomagnetic and Magnetospheric Models through network

g. Space Physics home page

1. Updated Main Space Physics home page.

h. JSPAG home page

9. Special Project Support for Joe King

- a. New Bowshock data for 1999-2000 was reprocessed (made additional parameters), then downloaded to FTP site and added to FTPBrowser. Data set now publicly available.
- b. Made improvements to s/w for parameter filtering.
- c. Building of new OMNI-2 data set
 1. Built 2-min res. ISEE3 plasma data from 24-sec data, and added 5-minute-res proton speed & latitude parameters.
 2. Built 2-min res. ISEE3 magnetic data from 1-min flat ASCII files
 3. Built merged 2-min res. files from magnetic & plasma data, and position
 4. Built time-shifted (to near Earth) hourly ISEE3 data from 2-min res. hourly merged ASCII files

10. Support for CDAWeb:

Work was completed on finding differences between existing Cluster CDAWeb CDFs, Cluster master CDFs, and new master CDFs. It was decided to use the incoming Cluster CDFs to update the current masters. A total of 59 masters were updated and installed in the CDAWeb masters directory. Global attributes MODS, TEXT, and Caveats were the only attributes updated in this current run.

Moments parameters were removed from wi_h1_swe CDF generation software. The CDFs were recreated and installed in CDAWeb.

11. Support for SKTEDITOR and MAKECDF:

A further request was received from M. Gangloff (France), regarding a time algorithm to handle day-count since 1950. The various existing time algorithms were considered, and a new algorithm was made, using a modified version of Algorithm 0. This was added to the current new version of makeCDF.

During testing of this new version, with two new time algorithms (using fractional days of the year, and using day-count since 1950), a new problem was detected on RUMBA when inserting data into multi-dimensional CDF_INT4 variables. This problem has apparently existed all along on certain platforms, but had not been encountered yet.

The problem occurred because the size of a long integer on the Alpha machine is 8 bytes instead of the normal 4 bytes. The problem did not occur on a SUN or VMS machine. The problem was fixed and tested on all 3 supported platforms (SUN, ALPHA, VMS) and a new version was created that will include these changes and 2 new epoch generation routines that were included for the new version. A test suite of 14 real/test data sets has been created to test all new versions of makecdf. The script will create a CDF from the current operational version and from the new developmental version. These CDFs will then be run thru CDFcompare to make sure that the CDFs still are identical and nothing was changed in the new version that will cause a difference in the 2 CDFs. Identical test suites were installed on NDADSB (VMS), RUMBA (ALPHA), and WHARFRAT(SUN). After a few additional test are completed the software will be installed in the operational directories on NDADSB and RUMBA.

12. Meetings, Presentations, and Publications

- a. D. Bilitza was invited to a panel discussion during the Ionospheric Effects Symposium (IES, Alexandria, VA, May 7-9) to represent empirical models. He will also present an invited talk on the ISIS TOPIST data and usage for ionospheric modeling.

- b. D. Bilitza attended the Space Environment Modeling Workshop of the Community Coordinated Modeling Center at the Raytheon Lanham facility from April 9-10, 2002.
- c. D. Bilitza attended the European Geophysical Society meeting in Nice, France from April 21-23 and presented a poster about the new topside model for IRI. A paper was submitted to JGR reporting about the testing of the IRI strom-model (Fuller-Rowell, Araujo, Bilitza).
- d. The paper 'Electron density profile of the Topside Ionosphere' by Huang, Reinisch, Bilitza, and Benson was accepted for publication in Annali di Geofisica.
- e. An extended abstract describing the ITM data sets now available through FTPHelper was submitted for the 2002 General Assembly of the International Union of Radio Science (URSI).
- f. E-mail notice was received from the Control Board Chairman regarding disposition of the 18 RIDs (reviewer's suggested changes) that a staff scientist submitted during review of seven CCSDS documents in February. 15 of his 18 RIDs were approved; there was only one other approved RID!

REQUEST HIGHLIGHTS:

- a. Responses were provided to eight requesters on matters related to the SSC, Science data, CCSDS, or SPX.
- b. Task staff assisted S. Joy (UCLA) in interpreting documentation and data format for 15-minute energetic particle acquired near Mercury by the Univ. of Chicago cosmic ray instrument on Mariner 10. He agreed to assist NSSDC in locating more processed flux data from this experiment for archiving.
- c. Five users were assisted with requests regarding ITM models and data.
- d. Response was made to Dr. D. Hubert (Obs. de Paris) about ISEE-2 data that are not available online. He wants electron densities for solar wind flow in the magnetosheath, to compare with ISEE-1 data. Two possible data sets were given, asking him to choose which, and they can be made available online in ASCII within about a week.
- e. Responded to requester about solar flares and if they would have explosive effects on earth.

ACTIVITY LOG:

The NSSDC models sites on anonymous ftp and on the Web continue to be very popular:

	ftp	WWW	
2001	RAID Model atm geom ion rad solar	CGM IRI MSIS IGRF TRAP	hpage
Nov	49425 4175 854 627 2076 260 202	977 2333 13066 612 366 66026	
Dec	36022 3736 701 613 1874 257 175	6485 1001 3599 304 125 61423	
Jan02	154622 4926 968 819 2377 324 273	1505 3399 8270 454 244 69610	
Feb	116199 7092 1078 659 3651 619 525	1106 2322 41633 475 621 71078	
Mar	164875 10177 1869 1462 4682 640 740	717 1659 5257 528 161 73074	
Apr	245162 6863 1134 884 3665 353 319	899 2220 1162 1266 122 74803	

----- ISIS -----

Month	Files	GBy	Total	WWW	IAE	Aer	DE	Exp	Hin	I/A	OGO	SM	SNOE
Oct	3,485	2.0	516.5	5178	I								
Nov			5339	I 886	12	1389	5	9	16	6	48		
Dec				I 18	7	61	6	41	64	1	1937		

Jan02	26,410	15.1	531.6	5640	I1396	4	3154	11	44	13	47	379	29035	
Feb	10,342	6.1	537.7	5736	I	25	5	371	3	22	836	8	29	4176
Mar	20,492	12.0	549.7	5917	I	179	18	48	99	83	78	27	17	14263
Apr	17,460	9.2	558.9	6057	I	50	215	15	5	22	1	5	16365	

e. WWW file and plot accesses during March and April for interplanetary COHO-related data from COHOWeb, CDAWeb, and NSSDCFTP:
Deep Space (Ulysses, Voyager, Pioneer, etc.) -- March: 3,915
Geospace (IMP-8, Prognoz, ACE, WIND, SOHO) ---- March: 28,314
Deep Space (Ulysses, Voyager, Pioneer, etc.) -- April: 1,530 {Yr: 8,067}
Geospace (IMP-8, Prognoz, ACE, WIND, SOHO) ---- April: 21,544 {Yr: 122,809}

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Curator: *Natalie Barnes*

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Task Assignment 99-301-00 April 2002

COMPUTER SYSTEMS MANAGEMENT TASK

GSFC ATR - C. Barrett

Raytheon ITSS Task Leader - J. Jacobi

Raytheon ITSS Group Manager -

TASK OBJECTIVE: The objectives of this task are to provide systems analysis and technical support to the operational computer activities of the NSSDC; to maintain existing hardware and system-level software to ensure the optimal performance and utilization of its resources and connectivity to its computing sites; to integrate new hardware and system-level software into existing systems to achieve upgraded capabilities and state-of-the-art facilities; to administer specialized software such as data base and optical disk management systems; and to provide users with the necessary documentation, training, and assistance so that NCF resources are fully utilized.

SIGNIFICANT EVENTS:

- Staff retrieved datasets from an obsolete and unsupported optical jukebox prior to excessing the jukebox and upgrading the host operating system.
- Staff began planning for the upgrade of Digital Unix on several Alpha processors in preparation for an upgrade to a newer version of the Oracle database.
- Continued to perform routine system administrative duties, including backups, application of stupid and confusing software upgrades and patches, providing assistance to users, and maintaining the IP spreadsheets and equipment database.

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Task Assignment 99-302-00

April 2002

SYSTEMS NETWORKING AND SMALL SYSTEMS

GSFC ATR - G. Goucher

Raytheon ITSS Task Leader - R. Dunlap

Raytheon ITSS Group Manager -

TASK OBJECTIVE: The objective of this task is to provide network engineering support to Code 600.

SIGNIFICANT EVENTS:

- Staff continues troubleshooting an intermittent loss of connectivity problem with the NDADS FDDI ring.
- Staff continues work to develop the Code 630 Web-based equipment data base.

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Task Assignment 99-303-00

April 2002

NSSDC COMMON DATA FORMAT (CDF)

GSFC ATR - D. Han

Raytheon ITSS Task Leader - M. Liu

Raytheon ITSS Group Manager - T. Kovalick

TASK OBJECTIVE: The objectives of this task are to carry out computer science research, develop computer software and provide user support for the NSSDC Common Data Format (CDF).

SIGNIFICANT EVENTS:

- Work continued to incorporate XML into CDF for enhancing CDF data exchange/conversion among other formats through XML. The DTD (Document Type Declaration) for the CDF had been further enhanced. The program that converts a CDF-conforming XML document to a CDF is being tested.
- Only one single user requests/questions was received this month.

CONCERNS AND PROBLEM AREAS:

- The GZIP compression/decompression option is turned off for 16-bit DOS/Windows 3.x due to its memory constraint.
 - A unusual problem occurs with the older Microsoft C 7.00 compiler in one of the EPOCH parsing routines on DOS/Windows 3.x. It occurs while using the floating point functions and type casting. It is suspected that the Microsoft executables may be getting too large and will require memory overlaying.
-

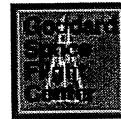
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Task Assignment 99-304-00

April 2002

PLES

GSFC ATR - N. James

Raytheon ITSS Task Leader - Dr. D. Williams

Raytheon ITSS Group Manager - T. Kovalick

TASK OBJECTIVE: The objectives of this task are to maintain data bases and metadata (NMC, WWW) for planetary, Earth sciences, and selected astrophysics data (HEASARC, EUVE, HST), provide request support and coordinate updates of user interfaces, coordinate WWW activities, support internal and external data base users, assure data set quality, coordinate planetary data acquisition and Earth science data transition, support educational activities, and coordinate publications.

SIGNIFICANT EVENTS:

- The NSSDC WWW server had a total of 13,068,658 error-free accesses logged for April 2002, a decrease of 3% compared to March 2002.
- Task staff responded to over 220 e-mail queries and telephone calls from external users and the Request Office.
- Task member updated the Moon and Jupiter, Saturn, Uranus, and Neptune satellite fact sheets and added rotation axis vector information to all planetary fact sheets.
- Task personnel updated spacecraft records for the MUSES-C and Genesis missions and updated the THEMIS instrument record for the 2001 Mars Odyssey mission.
- Task staff created a new Web page giving a list of reference books on planets, asteroids, comets, etc. and added "Global Earth Physics and two Skylab books to the "Online Books" page.
- The "About NSSDC" page was altered with text provided by J. King (Code 633).
- Task member provided a template for ingest of data sets to B. Brown (Code 633).
- Section 508 compliance information was provided for several Web sites by task personnel.
- Task staff provided updates to the ADC holdings file for January 2002 - March 2002 references.
- Task member participated in telecom with PDS and other data groups to discuss education and public outreach.

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Task Assignment 99-305-00 April 2002

NASA SCIENCE OFFICE OF STANDARDS AND TECHNOLOGY (NOST)
GSFC ATR - D. Sawyer
Raytheon ITSS Task Leader - J. Garrett
Raytheon ITSS Group Manager -

TASK OBJECTIVE: The objective of this task is to maintain and expand the NOST so that it can effectively respond to the standards needs of the NSSDC community.

SIGNIFICANT EVENTS:

NOST Archiving Tools Suite - Staff has

- Finalized the Package to Data File Restorer for VMS (PDFR-VMS) with documentation
- Continued developing File-Grouping System (MPGA) - designed the final implementation details and worked on the implementation for the Extractor, Splitter, and Restorer support utilities which also need to be upgraded for multi-file groups

ISO Data Archiving - Staff has

- Participated in the International ISO Archiving Standards Workshop held from April 8-9, 2002 at BNSC/Rutherford Appleton Laboratory near Oxford, England. Prior to workshop, reviewed documents and otherwise prepared for the workshop.
- Met with Senior Policy directors for Australian DOD to help them develop preservation strategies for their national DOD records. We were able to coordinate this meeting with the same meeting at NARA. Consequently there was an excellent exchange of ideas and verification from several sources for workable strategies.
- Updated information on the ISO Data Archiving Web Site at: <http://ssdoo.gsfc.nasa.gov/nost/isoas/>.

CCSDS On-Line Information System - Staff has

- Continued handling of the registration and agenda posting activities for the Spring set of CCSDS meetings up until meetings were actually held.
- Working with current contract holder to maintain the current CCSDS.ORG Web site and transition to the new Web site designed by the new contractor.
- Attended Webmasters meetings. Registered Section 508 compliance for the NOST Web sites.
- Posted the following new documents to the Web site.
 - CCSDS 647.3-B-1: Data Entity Dictionary Specification Language (DEDSL)-XML DTD Syntax (CCSD0013). Blue Book. Issue 1. January 2002.
 - CCSDS 650.0-B-1: Reference Model for an Open Archival Information System (OAIS). Blue Book. Issue 1. January 2002. (Note: This document was later removed when it was determined that some updates were not yet incorporated in the document.
- Participated in CCSDS Technical Steering Group and was available for CCSDS Management Council Meeting to support questions regarding the CCSDS.ORG Web site.

CCSDS Standards - Staff has

- Participated in the International CCSDS XML workshop held from April 3-5, 2002 at BNSC/Rutherford Appleton Laboratory near Oxford, England. Participated in the International CCSDS Panel 2 workshop held from April 8-12, 2002 at BNSC/Rutherford Appleton Laboratory near Oxford, England. Participated in the International CCSDS Technical Steering Group forum and workshops held from April 15-17, 2002 at DLR in Oberpfaffenhofen, Germany. Prior to meetings, reviewed documents and otherwise prepared for the meetings.

Goddard Technical Standards Coordination - Staff has

- Met with GSFC and NASA Technical Standards management to discuss the NASA Technical Standards Program and the NASA and GSFC Web sites. Made several suggestions for improvements in NASA Web site and NASA processes that will likely result in reduced work loads for standards reviews across NASA.
- Participated in a GSFC Technical Standards meeting.
- Updated the Web site to detail a number of completed and upcoming GSFC reviews of standards.

STATISTICS: CAOIS: As of March 31, 2002, there were 438 Data Description registration numbers assigned. Of these about 30 of the Data Description registration numbers are reserved for NSSDC use during the Cygnet migration, 45 are reserved for IMAGE ingest, and 26 for ISIS ingest. Data Description Packages for these must be generated.

UPCOMING MILESTONES/EVENTS:

NOST Archiving Tool Suite: Staff will

- Implement the Multifile Package Group Analyzer (MPGA), draft version 1.0 (the multi-file grouping capability)
- Begin testing group AIP generation for at least one of ISEE, Tape, DE, and/or PDS.
- Help to interface the MPGA into the Data Migration effort

ISO Archiving Standards: Staff will

- Update the Web site to provide information on new archiving thrusts.

CCSDS XML Group: Staff will

- Continue low level of support for possible CCSDS XML prototype effort.

CCSDS Standards: Staff will

- Comment on new drafts of the CCSDS Concept of Operations, CCSDS reorganization, and NASA CCSDS budgeting priorities.

Goddard Technical Standards Participation: Staff will

- Participate as needed in the GSFC Standards Working Group, the NASA Data System Standards Council and the GSFC Standards Review Boards.
- Continue updates for the Web site for GSFC Standards Coordination.

OLIS: Staff will

- Participate in upcoming CCSDS.ORG Web site redesign meetings as requested. Develop additional proposals for improving the CCSDS Web site as required.
- Add additional documents to the CCSDS Web site as they become available from the CCSDS editor.

CAOIS: Staff will

- Register new data description packages as they are submitted. Note that Cygnet migration, IMAGE ingest and ISIS ingest descriptions still need to be submitted.

Formats Evolution Process - Staff will

- Updating the FEP Web site if any new material is submitted.

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Curator: Natalie Barnes

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Task Assignment 99-306-00 April 2002

INFORMATION (METADATA) SYSTEMS DEVELOPMENT AND UPGRADES

GSFC ATR - Dr. J. Thieman

Raytheon ITSS Task Leader -

Raytheon ITSS Group Manager - T. Kovalick

TASK OBJECTIVE: The objectives of this task are to define and develop information systems and the interfaces thereto, maintain these systems and interfaces and support the generation of reports therefrom, and recommend and participate in the planning of upgrades to necessary support systems and software as appropriate.

SIGNIFICANT EVENTS:

- Work was completed on the port of the Task Request system from decaf/java and rings to the ssdoo Web server.
- The MasterCatalog servlet was modified to read contents of temporary files and display to standard output instead of redirecting users to temporary files and to not display quantity "0" for "Online" Media Information.
- The NIMS database was modified to remove all null values for "Online" media items.
- All images in the CD-ROM Catalog were verified to have an "alt" tag as required for Section 508 compliance.
- The development poster request system was ported to decaf/java and subsequent changes moved back to the production system on the "space" Web server.
- Minor modifications were made to the Space Events servlet for it to run under the new version of JBuilder and Tomcat.
- Rational Rose was used to generate Java template classes from the UML model for JIN.
- The SATX report was run for P. Ross (RITSS).
- The new version of JBuilder was installed and configured on two task members desktop computers.
- The database password for A. Lopez (RITSS) was reset at her request.

UPCOMING MILESTONES/EVENTS:

- Work will continue on JIN.
- The Space Events servlet will be delivered for use on the nssdc Web server.

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Task Assignment 99-307-00 April 2002

SUN-EARTH CONNECTION EDUCATION FORUM (SECEF)

GSFC ATR - Dr. J. Thieman

Raytheon ITSS Task Leader - Dr. S. Odenwald

Raytheon ITSS Group Manager - L. Mayo

TASK OBJECTIVE: The objective of this task is to provide administrative support of the SECEF managers and assistance in preparing for educational outreach events, seek opportunities to leverage SECEF activities for broad national impact, and assist in publicity for the SECEF by developing content for a Web site and publications.

SIGNIFICANT EVENTS:

- Staff continued with SECEF Web site redesign.
- Staff is coordinating next Sun Earth Day-March 20, 2003.
- Staff began planning for 2004 Venus Transit.
- Staff supported two Montgomery County (MCPS) Astronomy Curriculum Development meetings.
- Staff supported the National Congress Aviation and Space Education Conference on April 4-6, 2002 in Arlington, Virginia.
- Staff presented at the National Council of Teachers of Mathematics Conference on April 21-24, 2002 in Las Vegas
- Staff attended a planning meeting with the American Geological Institute on Earth Science Week 2002 in Reston, Virginia.
- Staff planned for the "thank you" luncheon for SEC EPO folks at the Spring AGU Meeting by putting the guest list together and sending out invitations.

UPCOMING MILESTONES/EVENTS:

- Staff will continue with the planning for the 2003 Sun-Earth Day.
- Staff will continue with planning for Venus Transit 2004.
- Staff will continue with scheduled EPC meetings.
- Staff support SECEF teleconferences.

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Task Assignment 99-312-00 April 2002

ANALYSIS SUPPORT FOR THE IMAGE MISSION

GSFC ATR - Dr. J. Green

Raytheon ITSS Task Leader - L. Garcia

Raytheon ITSS Group Manager - T. Kovalick

TASK OBJECTIVE: The objectives of the Analysis support for the IMAGE Mission task are to maintain and update local copies of the IMAGE software suite, create RPI data analysis software, and to create software to be used in correlative studies between IMAGE detectors and between IMAGE and other missions. This task will also support the synthesis of data and theory in the study of Earth's magnetosphere through creation of unique data products and services. This task will make available appropriate documentation for all of these objectives and will support the IMAGE Science Center Web site.

SIGNIFICANT EVENTS:

- Staff added seven new references, four abstracts, and four documents to the Publications section of the IMAGE Web site.
 - Staff put up two headquarters reports ("nuggets") and awards on the Web site.
 - Staff put up an announcement for the latest IMAGE meeting.
 - Staff searched the Internet to find a tool which could be adapted to use for searching the IMAGE site for sites with suspicious content.
 - Staff is following the search (which failed to turn up anything), a short set of requirements for the script was written.
 - Pseudo-code for the search script was written and the general output was designed.
 - Found four examples of IMAGE RPI and EUV correlated tail-crossings in 2002.
 - Staff created PNG images of spectrogram time slices during the kilometric continuum event of April 8, 2001.
 - Staff continued modifying figures for a paper on RPI and EUV observed plasma tail structures.
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Last Revised: Monday, 13-May-2002 12:09:02 EDT [NAB]

Task Assignment 99-313-00 April 2002

COMMUNITY COORDINATED MODELING CENTER

GSFC ATR - Dr. M. Hesse

Raytheon ITSS Task Leader - M. Kuznetsova

Raytheon ITSS Group Manager - T. Kovalick

TASK OBJECTIVE: This task will provide science and software support for Community Coordinated Modeling Center (CCMC). Specific support includes developing and testing of simulation codes for space weather models, performing simulations of realistic space weather events, providing visualization and analysis software, performing comparison of modeling results to satellite measurements, performing research in space plasma physics.

SIGNIFICANT EVENTS:

- New 63-node Beowulf system has been installed and is being tested. Run-on-request scripts are updated to use new system. The magnetosphere models have been installed on the new system and are running.
- Staff has taken over the maintenance and development of a C++ library to generate and read HDF5 data files from magnetosphere model outputs.
- The Space Environment Workshop held at Raytheon's facility in Lanham, Maryland was a success with 55 attendees and fruitful discussions.
- The NCAR-Graphics package has been installed. CTIP output displayed with the CCMC visualization interface can now be compared with NCAR-Graphics' plots.
- Run-on-request submission is being upgraded with a constant dipole tilt angle option. Pre-calculated day-and-time combinations (for a given dipole tilt toward / away from the sun) allow direct comparison between BATSRUS (GSM) and UCLA-GGCM (GSE) when GSM coordinates are identical to GSE coordinates (i.e. at times without Y-Z tilt of dipole in GSE).

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Task Assignment 99-315-00 April 2002

Automated Vulnerability Scanning and Data Integration/Reporting System DB Repository and Reporting/Publishing Sub-task

GSFC ATR - R. Schneider

Raytheon ITSS Task Leader - D. Baldrige

Raytheon ITSS Group Manager -

TASK OBJECTIVE: This task will provide automated uploading of ISS scan database files into a central composite database. A user interface for generating vulnerability reports will also be provided.

SIGNIFICANT EVENTS:

- Work continues to be stopped.
- ATR is rewriting statement of work pending additional funding and new requirements.
- Staff is meeting with ATR to discuss design ideas.

UPCOMING MILESTONES/EVENTS:

- Staff will review new statement of work.
- Staff will revise requirements.

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Task Assignment 99-316-00 April 2002

Solar Nebula SiO
GSFC ATR - J. Nuth
Raytheon ITSS Task Leader - A. Ali
Raytheon ITSS Group Manage

TASK OBJECTIVE: The objective of this study is to carry out research and analysis of SiO cluster mass distributions from data obtained using the molecular beam apparatus located at Penn State University. This experimental setup produced a unique data set on the cluster distribution of SiO clusters produced by partial condensation following laser evaporation. Future experiments will concentrate on extending these basic experiments to isotopically labeled systems using pure Si[28] and enriched oxygen isotopes. These experiments are highly relevant to the origin of oxygen isotopic anomalies in the early solar nebula and present a very complex analytical problem.

SIGNIFICANT EVENTS:

SiO Cluster Distributions and Oxygen Isotopic Fractionation in the Primitive Solar Nebula Measurements of SiO cluster isotope mass distributions using pure Si28 and normal O were undertaken. We are currently involved in making a rod of pure Si28 out of powder silicon.

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